

REMARKS

A Substitute Specification is being submitted herewith together with a marked-up copy of the application making editorial corrections. Please replace the Substitute Specification with the specification originally filed with the application. No new matter has been added.

Claims 1 and 5 have been rejected by the Examiner under 35 USC 102(b) as being anticipated by, or in the alternative, under 35 USC 103(a) as being obvious over Shimomai et al., U.S. Patent 3,998,988. This rejection is respectfully traversed.

The present invention is directed to a side-by-side type composite filament which possesses excellent shrinkage, even in the filament state and which has not undergone a false twisting process. The high crimp (shrinkage) side-by-side type component filament of the present invention comprises two kinds of thermoplastic polymers which are arranged side-by-side wherein one thermoplastic polymer has a boiling water shrinkage (Sr_2) which is 20 to 75% of the boiling water shrinkage (Sr_1). Each of the boiling water shrinkage parameters, that is, Sr_1 and Sr_2 are measured by specifically identified methods. As can be seen by referring to page 23 of the present application, Examples 1, 2 and 3 are superior in crimp property and exhibit the same properties as natural fibers when compared to Comparative Examples 1, 2 and 3.

Shimomai relied upon by the Examiner is directed to a conjugated fiber of a thermoplastic synthetic organic polymer composed of a high melting polymer component and a low melting polymer component, said low melting polymer component having a melting point at least 40°C lower than that of the high melting polymer component. Thus, the prior art reference is not even remotely concerned with the Applicants' inventive contribution which is directed to a high shrinkage side-by-side type component filament which utilizes two kinds of thermoplastic polymers arranged side-by-side one of said thermoplastic polymers having a boiling water shrinkage Sr_2 and the other thermoplastic polymer having a boiling water shrinkage Sr_1 , wherein Sr_2 is 20 to 75% of Sr_1 . This is to be distinguished from the teachings of the prior art relied upon by the Examiner wherein the patentees only refer to shrinkage of a filament in boiling water not

exceeding 70%. Thus, in Col. 6 of Shimomai, the patentees merely state that if the shrinkage in boiling water exceeds 70%, the finely divided adsorbent is non-uniformly melt-adhered due to shrinkage stress which occurs at the time of the heat treatment. Thus, the prior art reference is not concerned with a shrinkage relationship between side-by-side filaments but rather to the amount of shrinkage of a single filament, that is, for example, that Sr_2 is 20 to 70% and not that Sr_2 is 20 to 75% of Sr_1 , as defined by the present invention. Accordingly, there is no relationship between the present invention and the teachings of Shimomai which are directed to polymer filaments which are drawn by a method which adjusts the shrinkage in boiling water of the filaments to not more than 70%. Thus, it is readily apparent that Shimomai does not recognize the Applicants' inventive contribution.

As the Examiner will note, claims 6-9 have been added to the present application to cover additional features of the present invention. Newly added claim 6 is directed to the composite filament of claim 1 wherein the thermoplastic polymers have a number average molecular weight difference (ΔMn) of 5,000 to 15,000. Newly added claim 7 is directed to the composite filament of claim 1 wherein the temperature area exhibiting 95% of maximum thermal stress is 120 to 230°C. Newly added claim 8 is directed to the composite filament of claim 1 wherein the range of maximum thermal stress per denier is 0.1 to 0.4 g/denier. Finally, newly added claim 9 merely recites one of the specific thermoplastic polymers which can be utilized in the present invention.

Accordingly, in view of the above amendments and remarks, reconsideration of the rejection and allowance of all of the claims of the present application are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch Reg. No. 22,463 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

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Reply to Office Action of May 18, 2007

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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